UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,784	09/19/2003	Thomas H. Chuang	STL11057	6734

7590 10/12/2004

Mitchell McCarthy
Seagate Technology LLC
10321 West Reno
OKM270
Oklahoma City, OK 73127-7140

EXAMINER	
LAU, TUNG S	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/665,784	CHUANG, THOMAS H.	
	Examiner	Art Unit	
	Tung S Lau	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16 and 18-20* is/are rejected.

7)☒ Claim(s) *6 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9-19-2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Jardine et al. (U.S. Patent 4,958,125).

Regarding claim 8:

Jardine discloses a rotating disc data storage device balancer for measuring vibration comprising: a motion sensitive transducer attachable to the data storage device comprising an output producing a time domain analog signal in response to the vibration (Col. 2, Lines 4-54, fig. 2); a timing sensor adapted to detect an instantaneous speed of the disc stack (fig. 3); and means for processing the transducer signal in determining a magnitude and phase of the signal at a frequency determined by the timing sensor (fig. 1, unit 28).

Regarding claim 13, Jardine discloses the means for processing is characterized by a comparator determining whether the magnitude of the vibration signal at the

frequency associated with the instantaneous speed of the rotating member is greater than a preselected threshold (Col. 6, Lines 33-54, Col. 7-8, Lines 63-30); Regarding claim 14, Jardine discloses the instantaneous speed is associated with a transient start up state of the article's rotating disc and is less than the operating speed of the disc (Col. 1, Lines 15-47, fig. 1, unit 14); Regarding claim 15, Jardine discloses simultaneous vibration signal along different planes (Col. 2, Lines 26-33); Regarding claim 16, Jardine discloses the transducers are positioned orthogonally (Col. 3-4, Lines 58-20).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

a. Claims 1-5, 7, 9-12, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jardine et al. (U.S. Patent 4,958,125) in view of Cobern (U.S. Patent 4,647,853).

Regarding claim 1:

Jardine discloses a device for measuring vibration in an article having a rotating member, the device comprising: a motion sensitive transducer attachable to the article comprising an output producing a time domain analog signal in response

to the vibration (abstract); data acquisition member comprising an input connected to the transducer output for sampling the transducer signal and comprising an output producing a time domain signal from the sampling (fig. 2, 3); a timing sensor adapted to detect an instantaneous speed of the rotating member and triggering the data acquisition member to begin sampling when the rotating member is rotating (Col. 1-2, Lines 5-62), and a processor (fig. 1, unit 28) comprising an input connected to the data acquisition member output for translating the time domain signal to a frequency domain signal and determining the magnitude and phase of the vibration signal at a frequency associated with the instantaneous speed of the rotating member (Col. 4-6, Lines 21-54, fig. 3-4).

Regarding claim 18:

Jardine discloses a method for measuring vibration in an article having a rotating member, the method comprising: orienting a motion-sensitive transducer on the article for detecting a vibration signal that is proportional to the article vibration along a desired direction (abstract); detecting the instantaneous speed of the rotating member (Col. 1, Lines 5-14); sampling the vibration signal in obtaining a time domain signal of the vibration; translating the time domain signal to a frequency domain signal; and determining the magnitude and phase of the frequency domain signal at the frequency associated with the instantaneous speed of the rotating member (Col. 2-5, Lines 20-20, fig. 3-5).

Regarding claim 2, Jardine discloses the means for processing is characterized by a comparator determining whether the magnitude of the vibration signal at the frequency associated with the instantaneous speed of the rotating member is greater than a preselected threshold (Col. 6, Lines 33-54, Col. 7-8, Lines 63-30); Regarding claim 3, Jardine discloses the rotating speed is less than the speed of the member (abstract); Regarding claim 4, Jardine discloses simultaneous vibration signal along different planes (Col. 2, Lines 26-33); Regarding claim 5, Jardine discloses the transducers are positioned orthogonally (Col. 3-4, Lines 58-20); Regarding claims 7, 12, Jardine discloses perform Fourier transform on the signal (Col. 7-8, Lines 35-30, fig. 3); Regarding claim 10, Jardine discloses triggered sensor when the disc begin rotating (fig.2, 3); Regarding claim 11, Jardine discloses comparing frequency domain signal (fig. 3); Regarding claim 19, Jardine discloses rotation greater than zero (fig. 3); Regarding claims 20, 9, Jardine discloses comparing the magnitude of the signal at the frequency associated with the instantaneous speed of the rotating member with a preselected threshold (Col. 2-5, Lines 34-20).

Jardine does not disclose the use of digital, analog and digital converter format, Cobern discloses the use of digital, analog and digital converter format (fig. 4, unit 102, 104), in order not to have to require extensive modification of the system (Col. 1, Lines 40-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jardine to have the use of digital, analog and digital converter format taught by Cobern in order not to have to require extensive modification of the system (Col. 1, Lines 40-55).

Claim Objections

3. Claims 6, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the use of optic sensor for rotation detection.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL

John Barlow
Supervisory Patent Examiner
Technology Center 2800